

Patent Application No. 10/056,546

IN THE CLAIMS:

Please amend claims 1, 16, and 22, and add new claims 23-28 as follows:

1 Claim 1. (currently amended) Method for generating persistent  
2 annotations of multimedia content, comprising one or more repetitions  
3 of the following steps:  
4 actively selecting examples of multimedia content to be  
5 annotated by a user, wherein the examples of multimedia content are  
6 selected based on at least one criterion for achieving a maximal  
7 disambiguation result;  
8 accepting input annotations from said user for said selected  
9 examples;  
10 propagating said input annotations to other instances of  
11 multimedia content; and  
12 storing said input annotations and said propagated annotations.

1 Claim 2. (original) The method of claim 1, wherein the step of  
2 actively selecting is performed using a selection technique selected  
3 from the group consisting of: deterministic and probabilistic.

1 Claim 3. (original) The method of claim 2, wherein the step of  
2 actively selecting, which is performed deterministically or  
3 probabilistically, is based on explicit models and feature  
4 proximity/similarity measures, and returns one or more examples of  
5 multimedia content to be annotated.

1 Claim 4. (original) The method of claim 2, wherein the step of  
2 actively selecting, which is performed deterministically or  
3 probabilistically, is based on implicit models and feature  
4 proximity/similarity measures, and returns one or more examples of  
5 multimedia content to be annotated.

1 Claim 5. (original) The method of claim 1, wherein an  
2 optimization criterion for active selection includes one or more  
3 criteria selected from the group consisting of: maximizing  
4 disambiguation, information measures, and confidence.

1 Claim 6. (original) The method of claim 1, wherein the multimedia  
2 content comprises one or more types selected from the group

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3 consisting of: images, audio, video, graphics, text, multimedia, Web  
4 pages, time series data, surveillance data, sensor data, relational  
5 data, and XML data.

1 Claim 7. (original) The method of claim 1, wherein the input  
2 annotations are created by a user with reference to a vocabulary.

1 Claim 8. (original) The method of claim 7, wherein the vocabulary  
2 contains one or more items selected from the group consisting of:  
3 terms, concepts, labels, and annotations.

1 Claim 9. (original) The method of claim 1, wherein the process of  
2 creating input annotations by the user involves multimodal  
3 interaction with the user using graphical, textual, and/or speech  
4 interface.

1 Claim 10. (original) The method of claim 1, wherein the input  
2 annotations are created by means of steps selected from the group  
3 consisting of: creating new annotations, deleting existing  
4 annotations, rejecting proposed annotations, and modifying  
5 annotations.

1 Claim 11. (original) The method of claim 7, wherein the  
2 vocabulary is adaptively or dynamically organized and/or limited by  
3 the system or the user.

1 Claim 12. (original) The method of claim 9, wherein the  
2 multimodal interaction involves speech recognition, gaze detection,  
3 finger pointing, expression detection, and/or effective computing  
4 methods for sensing a user's state.

1 Claim 13. (original) The method of claim 1, wherein the  
2 determination of the propagation of annotations is made  
3 deterministically or probabilistically and on the use of models for  
4 each annotation or for joint annotations.

1 Claim 14. (original) The method of claim 2, wherein the models  
2 are created or learned automatically or semi-automatically and/or are  
3 updated adaptively from interaction with the user.

1 Claim 15. (original) The method of claim 2, wherein the models  
2 are based on nearest neighbor voting or variants, parametric or

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3 statistical models, expert systems, rule-based systems, or hybrid  
4 techniques.

1 Claim 16. (currently amended) System for generating persistent  
2 annotations of multimedia content, comprising:

3 means for actively selecting examples of multimedia content to  
4 be annotated by a user, wherein the examples of multimedia content  
5 are selected based on at least one criterion for achieving a maximal  
6 disambiguation result;

7 means for accepting input annotations from said user for said  
8 selected examples; means for propagating said input annotations to  
9 other instances of multimedia content; and

10 means for storing said input annotations and said propagated  
11 annotations.

1 Claim 17. (original) The system of claim 16 wherein the means for  
2 actively selecting uses a selection technique selected from the group  
3 consisting of: deterministic and probabilistic.

1 Claim 18. (original) The system of claim 17, wherein the means  
2 for actively selecting, which uses a deterministic or probabilistic  
3 technique, is based on explicit models and feature  
4 proximity/similarity measures, and returns one or more examples of  
5 multimedia content to be annotated.

1 Claim 19. (original) The system of claim 17, wherein the means  
2 for actively selecting, which uses a deterministic or probabilistic  
3 technique, is based on implicit models and feature  
4 proximity/similarity measures, and returns one or more examples of  
5 multimedia content to be annotated.

1 Claim 20. (original) The system of claim 16, wherein an  
2 optimization criterion for active selection includes one or more  
3 criteria selected from the group consisting of: maximizing  
4 disambiguation, information measures, and confidence.

1 Claim 21. (original) The system of claim 16, wherein the  
2 multimedia content comprises one or more types selected from the  
3 group consisting of: images, audio, video, graphics, text,

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4 multimedia, Web pages, time series data, surveillance data, sensor  
5 data, relational data, and XML data.

1 Claim 22. (currently amended) A computer program product in a  
2 computer readable medium for generating persistent annotations of  
3 multimedia content, the computer program product comprising  
4 instructions for performing one or more repetitions of the following  
5 steps: actively  
6 selecting of examples of multimedia content to be annotated by  
7 a user, wherein the examples of multimedia content are selected based  
8 on at least one criterion for achieving a maximal disambiguation  
9 result;  
10 accepting input annotations from said user for said selected  
11 examples;  
12 propagating said input annotations to other instances of  
13 multimedia content; and  
14 storing said input annotations and said propagated annotations.

1 Claim 23. (new) The method of claim 1, wherein the at least one  
2 criterion includes an ambiguity level of the selected examples.

1 Claim 24. (new) The method of claim 1, wherein the at least one  
2 criterion includes a confidence level of the selected examples, the  
3 confidence level being inversely proportional to a distance of a new  
4 feature of the selected examples from a separating hyperplane in an  
5 induced higher dimensional feature space.

1 Claim 25. (new) The system of claim 16, wherein the at least one  
2 criterion includes an ambiguity level of the selected examples.

1 Claim 26. (new) The system of claim 16, wherein the at least one  
2 criterion includes a confidence level of the selected examples, the  
3 confidence level being inversely proportional to a distance of a new  
4 feature of the selected examples from a separating hyperplane in an  
5 induced higher dimensional feature space.

1 Claim 27. (new) The computer program product of claim 22, wherein  
2 the at least one criterion includes an ambiguity level of the  
3 selected examples.

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1        Claim 28. (new) The computer program product of claim 22, wherein  
2        the at least one criterion includes a confidence level of the  
3        selected examples, the confidence level being inversely proportional  
4        to a distance of a new feature of the selected examples from a  
5        separating hyperplane in an induced higher dimensional feature space.